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Original Article

Overview Of Toddlers Diarrhea Self-Medication At Pharmacy "X", Sidoarjo, January-March 2025

Tinjauan Umum Pengobatan Mandiri Diare Pada Balita Di Apotek "X", Sidoarjo, Januari-Maret 2025

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Abstract

Diarrhea is one of the common health problems in toddlers and is often treated through self-medication by the community. Choosing the right medicine is very important to avoid complications, considering the low immune system of toddlers and the potential risks of using drugs without a doctor's prescription. This study used a qualitative descriptive design, the study was conducted at the "X" Pharmacy, Sidoarjo District, Sidoarjo Regency from January to March 2025. The sample consisted of 90 parents/caregivers of toddlers who bought diarrhea medicine for their children and met the inclusion criteria. The results showed that the types of drugs most often chosen for self-medication for diarrhea in toddlers were probiotics (46%), zinc supplements (41%), Oral Rehydration Solution (ORS) (11%), and a combination of kaolin-pectin (2%). The characteristics of the respondents were mostly aged 20-25 years and had a high school or diploma education level. The choice of diarrhea medicine in self-medication in toddlers was dominated using probiotics and zinc, in accordance with the recommendations of the Indonesian Ministry of Health in handling diarrhea. However, there is still a need to improve education to the public regarding the rational use of drugs and clinical indications for giving antibiotics. An active role is needed for health workers, especially pharmacists, in providing accurate information to the public to prevent the negative impacts of inappropriate self-medication.

Abstrak

Diare merupakan salah satu masalah kesehatan umum pada balita dan seringkali diobati secara mandiri oleh masyarakat. Memilih obat yang tepat sangat penting untuk menghindari komplikasi, mengingat sistem imun balita yang masih lemah dan potensi risiko penggunaan obat tanpa resep dokter. Penelitian ini menggunakan desain deskriptif kualitatif, penelitian dilakukan di Apotek "X", Kecamatan Sidoarjo, Kabupaten Sidoarjo dari Januari hingga Maret 2025. Sampel terdiri dari 90 orang tua/pengasuh balita yang membeli obat diare untuk anak mereka dan memenuhi kriteria inklusi. Hasil penelitian menunjukkan bahwa jenis obat yang paling sering dipilih untuk pengobatan mandiri diare pada balita adalah probiotik (46%), suplemen seng (41%), Oral Rehydration Solution (ORS) (11%), dan kombinasi kaolin-pektin (2%). Karakteristik responden sebagian besar berusia 20-25 tahun dan memiliki tingkat pendidikan SMA atau diploma. Pilihan obat diare dalam pengobatan mandiri pada balita didominasi oleh penggunaan probiotik dan seng, sesuai dengan rekomendasi Kementerian Kesehatan Indonesia dalam penanganan diare. Namun, masih perlu peningkatan edukasi kepada masyarakat mengenai penggunaan obat yang rasional dan indikasi klinis pemberian antibiotik. Peran aktif diperlukan dari petugas kesehatan, khususnya apoteker, dalam memberikan informasi yang akurat kepada masyarakat untuk mencegah dampak negatif dari pengobatan mandiri yang tidak tepat.

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INTRODUCTION

Indonesians frequently resort to self-medication as a preliminary measure in addressing health concerns when symptoms manifest. Self-medication is defined as the practice of treating oneself by selecting and using medications available without a physician's prescription, provided that the medication is deemed safe and appropriate for the symptoms being experienced [1,2,3]. Proper self-medication can provide several benefits, including reducing healthcare costs, shortening waiting times for treatment, and decreasing the workload of healthcare professionals, especially for minor illnesses[2,4].

However, inappropriate self-medication practices due to limited knowledge regarding dosage, indications, and drug selection may lead to adverse effects, inappropriate therapy, and delayed diagnosis[1, 4,5].Therefore, adequate public education regarding rational drug use is essential, particularly for diseases that are commonly treated without medical supervision [6,7]. One of the diseases frequently treated through self-medication is diarrhea. Diarrhea is considered a common illness that can often be managed independently if there are no severe complications [6,8].

Diarrhea is characterized by an increase in the frequency of bowel movements with a soft to liquid consistency. This ailment is among those with a high incidence rate, particularly among young children. A multitude of reports indicate that diarrhea persists as a primary cause of mortality among children, predominantly attributable to the rapid onset of dehydration [9,10]. Clinically, diarrhea is characterized by an increased frequency of bowel movements with soft or liquid stool consistency. Despite being common, diarrhea remains a significant public health problem, especially among infants and toddlers, due to the high risk of dehydration and nutritional disturbances[9,10] . Several studies have also reported that recurrent diarrhea during early childhood is associated with impaired growth and an increased risk of stunting [11,12].

The causes of diarrhea are multifactorial and include infections caused by bacteria, viruses, and parasites, as well as non-infectious causes such as food poisoning and adverse effects of certain medications. The spread of diarrheal diseases is closely related to environmental sanitation, access to clean water, personal hygiene, and food safety practices [13,14]. Poor sanitation conditions and unhealthy living environments contribute significantly to the transmission of diarrhea, particularly in densely populated communities. Therefore, diarrhea management should not only focus on pharmacological therapy but also involve preventive efforts through the implementation of clean and healthy living behaviors[4,15–17].

Management of diarrhea in children generally includes fluid and electrolyte replacement through oral rehydration solution, zinc supplementation, adequate nutritional intake, and the selective use of antibiotics when clinically indicated. Early and proper management is important because toddlers are highly vulnerable to dehydration due to their immature immune systems [18,19]. In addition, children with poor nutritional status may experience worsening health conditions if diarrhea is not treated appropriately and promptly[20–22]. For this reason, the role of parents or caregivers in selecting appropriate medication during self-medication practices becomes very important.

This study was conducted in an area characterized by high population density and environmental conditions that may increase the risk of diarrhea transmission, such as rice fields, swamps, and drainage areas[17,23]. Pharmacy “X” in Sidoarjo District is frequently visited by families with toddlers, making self-medication practices for childhood diarrhea relatively common in this setting [16,17,24]. Research regarding the pattern of self-medication for diarrhea in toddlers is important to provide information about the types of medications commonly used by the community and to evaluate whether these practices are in line with current recommendations[23].

Therefore, this study aimed to describe the pattern of self-medication for diarrhea in toddlers at Pharmacy "X" in Sidoarjo District during January–March 2025. The findings of this study are expected to provide additional information regarding the use of diarrhea medication in toddlers, serve as reference material for educational institutions, and improve public understanding of the rational and safe use of medicines for childhood diarrhea[25].Furthermore, this study is expected to provide practical information for families in managing childhood diarrhea safely and in accordance with recommended treatment guidelines.

METHODS

The present study employed a descriptive qualitative design, incorporating a structured interview approach, to obtain an overview of self-medication practices for treating diarrhea in toddlers at Pharmacy "X" in Sidoarjo District. The data collection process was executed concurrently, thereby ensuring the collection of results that reflected the prevailing circumstances in the field. The data collection procedure commenced with the procurement of research authorization, subsequently followed by the selection of respondents based on predetermined inclusion criteria. Respondents who met the established criteria were administered a questionnaire. Subsequent to the collection of data, the researcher examined the data, coded it, transferred it to a master table, and cleaned it to ensure the validity and consistency of the information. The research was conducted at Pharmacy "X" in Sidoarjo District, Sidoarjo Regency. The data collection phase was conducted from January to March of 2025.

Research Variables

The present study incorporated two primary variables: independent and dependent variables. The independent variable in this study was the selection of diarrhea medication for toddlers by parents or caregivers. The dependent variable in this study was a description of self-medication practices for diarrhea in toddlers at Pharmacy "X." Each variable is described based on characteristics that can be measured through a questionnaire. The age of the infant's mother is measured using an interval scale, the age of the infant using a nominal scale, and the level of education using an ordinal scale. The therapy given uses a nominal scale with categories of drug choices such as kaolin-pectin, probiotics, zinc supplementation, and oral rehydration solution.

Population and Sample

Inclusion criteria

inclusion criteria, namely parents who purchased medication for toddlers aged 1–5 years with diarrhea and were willing to be respondents.

Exclusion criteria

Exclusion criteria included parents who could not read and write, spoke languages other than Indonesian, or parents of toddlers who did not have diarrhea.

Sampling Techniques

The sampling technique employed nonprobability sampling in conjunction with the purposive sampling method, a technique that determines the sample based on specific criteria deemed pertinent to the research objectives. The sample size was determined using the Slovin formula with a 10% margin of error and a 90% confidence level, as follows:

$$n = \frac{N}{1 + Ne^2}$$

Information:

n = sample size

N = population size

e = margin of error (10% or 0.1)

Upon entering a population value of 42, the following results were obtained:

$$n = \frac{42}{1 + 42(0,1)^2}$$

$$n = \frac{42}{1 + 0,42}$$

$$n = \frac{42}{1,42} = 29,57 \approx 30$$

This number was then multiplied by three according to the research requirements, resulting in a total sample of 90 respondents.

Instruments and Data Collection

The research instrument employed a structured questionnaire administered through face-to-face interviews with respondents. The questionnaire was designed to identify the types of drugs chosen and the factors influencing self-medication decisions. Primary data were obtained from interviews and questionnaires, while secondary data were obtained from records of the number of toddlers suffering from diarrhea at Pharmacy "X.

Data Analysis

The data obtained from the questionnaire were analyzed using descriptive univariate analysis. The analysis was conducted to describe respondents' characteristics, including parents' age, toddlers' age, education level, and the types of drugs used for self-medication of diarrhea in toddlers. The data were presented in the form of frequency distribution tables and percentages. Percentage calculations were performed using the following formula:

$$P = \frac{f}{n} \times 100\%$$

Where:

- P = Percentage
- f = Frequency
- n = Total number of respondents

The results were interpreted descriptively according to the objectives of the study.

RESULT AND DISCUSSION

The present study was conducted over a period of three months at Pharmacy "X" in Sidoarjo District, Sidoarjo Regency, from January to March 2025. The data presented herein was obtained through the administration of questionnaires to parents or caregivers of toddlers with diarrhea.

Respondent Characteristics

The respondents' characteristics in this study include their age, the age of the toddlers they care for, and their level of education. A comprehensive demographic overview of the respondents is presented in Table 2. The total number of respondents in this study was 90 people.

Table 1. Respondent Characteristics

Characteristics	Categories	Frequency (n)	Percentage (%)
Respondent Age	20-25 Years Old	50	55%
	26-30 Years Old	25	27%
	31-35 Years Old	15	17%
	36-40 Years Old	0	1%
Toddler Age	1 Years Old	27	32%
	2 Years Old	27	32%
	3 Years Old	29	35%
	4 Years Old	7	1%
Respondent Education	Junior High School	7	8%
	Senior High School	48	53%
	Diploma / College	35	39%
Amount		90	100%

As indicated by the data presented in Table 1, the majority of respondents fell within the 20–25 age range (55%), with a significant proportion comprising those between the ages of 26 and 30 (27%), followed by those between 31 and 35 (17%), and finally those between 36 and 40 (1%). The age of respondents constitutes a salient factor that can influence their capacity to comprehend health information, including in determining medication choices for self-medication. In the context of toddler age characteristics, the 3-year-old age group exhibits the highest prevalence (35%), followed by 1 and 2 years old (32% each) and 4 years old (1%). Regarding educational attainment, the data indicated that more than half of the respondents had completed high school, accounting for 53% of the sample. This was followed by individuals who had obtained a diploma or college degree, constituting 39% of the respondents. Notably, only 8% of the respondents had graduated from junior high school, and no respondents reported not having completed high school. The respondents' level of education has been demonstrated to influence their capacity to receive and process information related to the management of diarrhea.

Type of Medication Administration

The therapeutic approach to diarrhea encompasses non-pharmacological interventions, such as fluid and electrolyte replacement, dietary modifications, and pharmacological prevention and therapy. This latter category includes the use of antidiarrheal medications and antibiotics. The administration of antibiotics is reserved for specific conditions, including bloody diarrhea, diarrhea caused by cholera, and diarrhea accompanied by comorbidities[28]The present study documented the various categories of pharmaceuticals and nutritional supplements procured by respondents during the designated study period.

Table 2. Types of Medication Selection

Type of Medicine	Number of Patients	Percentage (%)
Probiotics	30	46%
Zinc	27	41%
Oral Rehydration Solution	26	11%
Kaolin–Pectin	7	2%

Amount	90	100

The most prevalent type of medication administered was probiotics, given to 30 infants (46%). Probiotics, such as Lactobacillus casei (L-Bio) and a combination of Lactobacillus acidophilus–Bifidobacterium longum–Streptococcus thermophilus (Lacto-B), have been shown to aid in the absorption of nutrients, regulate water absorption, and enhance stool consistency. Probiotics have been demonstrated to reduce intestinal pH through the production of lactic acid, thereby impeding the proliferation of pathogenic bacteria. Probiotics have been demonstrated to be efficacious in reducing the frequency and duration of acute diarrhea in children. Zinc supplements were utilized by 27 infants (41%) This finding is consistent with Nasif [7], who reported that probiotics were among the most commonly selected self-medication choices for diarrhea in community pharmacies in Padang, Indonesia. Similarly, Nuzhat et al emphasized the growing community preference for probiotic-based interventions in managing childhood diarrhea in Southeast Asia. Zinc has been demonstrated to play a role in DNA formation, boosts the immune system, and supports protein synthesis. As posited by Wulandari [23], the regular administration of zinc supplements for a period of ten days has been demonstrated to reduce the severity of diarrhea, enhance immune system function, and prevent recurrent bouts of diarrhea. It has also been reported that zinc effectively reduces the frequency of defecation and the duration of acute diarrhea in toddlers. In line with the current study, Legesse et al[19] found that zinc supplementation was widely used in combination with ORS in treating diarrhea among under-five children in East Africa, highlighting its universal role in diarrhea management across low-middle income countries.

Furthermore, oral rehydration solution was utilized by 26 toddlers (11%). An oral rehydration solution is a medical intervention employed to restore fluid and electrolyte levels in patients suffering from diarrhea. The administration of oral rehydration solution (ORS) can reduce stool volume by 25%, reduce nausea and vomiting by 30%, and reduce the need for intravenous fluids by up to 33%[29] . The efficacy of the WHO-recommended ORS in accelerating the recovery of diarrhea has been demonstrated by numerous studies, which have also noted the potential for imbalances in sodium and potassium levels following rehydration. The relatively low use of ORS (11%) in this study contrasts with WHO recommendations and findings by Legesse [19], who reported higher ORS co-utilization rates in structured health settings. This gap suggests a need for community-level health promotion to increase ORS awareness among caregivers.

In Another medication employed in this study is a combination of kaolin-pectin, administered to 7 toddlers (2%). According to Walker, kaolin-pectin functions by adsorbing bacterial toxins and binding water, thereby reducing intestinal peristalsis and improving stool consistency[25]. The minimal use of kaolin-pectin (2%) in this study aligns with the declining recommendation of this drug class in current clinical guidelines, as it is no longer a first-line treatment for childhood diarrhea[27].

CONCLUSION

A study of the description of self-medication in the management of diarrhea in toddlers at Pharmacy "X" in Sidoarjo District from January to March 2025 was conducted. The results of the study indicated that the most commonly used drug group by respondents was probiotics (46%), followed by zinc supplements (41%), oral rehydration solution (11%), and kaolin-pectin combination (2%). These findings suggest that the medication selected by the community does not yet fully align with current WHO recommendations[27] .The aforementioned recommendations underscore the significance of zinc and oral rehydration solution as the primary therapeutic

modalities for treating diarrhea in children. Zinc has been demonstrated to play a role in reducing the frequency of bowel movements, improving stool consistency, and accelerating the healing process. In addition, oral rehydration solutions serve to replace fluid and electrolyte loss, thereby preventing dehydration..

In light of these findings, it is recommended that Pharmacy "X" in Sidoarjo District increase its educational and outreach activities to the community regarding the proper use of medications for self-medication of diarrhea in toddlers, in accordance with the recommendations of international health organizations. Furthermore, concerted promotional efforts are required to prevent diarrhea through various measures, including the promotion of clean and healthy living behaviors, maintenance of environmental hygiene, hand-washing before eating, exclusive breastfeeding, provision of complementary foods at 6-9 months of age, utilization of proper sanitation facilities, and provision of immunizations, including measles immunization. It is anticipated that these initiatives will enhance public awareness and contribute to a reduction in the prevalence of diarrhea among toddlers.

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AUTHOR CONTRIBUTION STATEMENT

APH: Supervision, Guidance, Conceptualization; **LS**: Data Collection, Pharmacy Permission Processing, Investigation; **AZF**: Data Curation, Analysis, Writing Original Draft Preparation

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